

WHAT IS CLAIMED:

1. A vehicle, comprising:  
an energy producing and storage system including  
5 first and second portions cooperating in a nesting  
relationship, thereby minimizing vehicle space usage; and  
a vehicle body including a floor having a first  
concavity formed therein for receiving a third portion of  
the system from outside the vehicle, the first concavity  
10 being configured to prevent at least some of the third  
portion from extending beyond the vehicle body, and to  
minimize use of vehicle occupant space.
2. The vehicle of claim 1, further comprising at  
15 least one transverse support disposed on an inside of the  
floor along a length of the first concavity, thereby adding  
strength to the vehicle body in a transverse direction, the  
at least one transverse support being configured to provide  
an attachment structure for a corresponding vehicle front  
20 seat.
3. The vehicle of claim 1, wherein the system  
includes a fuel cell system, and wherein the first portion  
includes a fuel tank, the second portion includes a storage  
25 device for storing and providing electricity, and the third  
portion includes a fuel cell stack.
4. The vehicle of claim 3, further comprising a  
pair of longitudinal supports, each of the longitudinal  
30 supports being attached to the vehicle body across a  
corresponding portion of the first concavity, thereby adding  
strength to the vehicle body in a longitudinal direction,  
each of the longitudinal supports being configured to

receive a corresponding mounting bracket of the fuel cell stack.

5           5.     The vehicle of claim 3, wherein the storage device is a battery, and the nesting relationship between the fuel tank and the battery is defined by a concave portion of the battery disposed along a length of the battery, generally conforming to a convex portion of the fuel tank disposed along a length of the fuel tank.

10           6.     The vehicle of claim 3, wherein the vehicle body includes a second concavity oriented longitudinally along a length of the vehicle, the second concavity providing a conduit between a front of the vehicle and a rear of the vehicle.

15           7.     The vehicle of claim 6, wherein the first concavity has a first depth and the second concavity has a second depth larger than the first depth.

20           8.     The vehicle of claim 6, wherein the first concavity is oriented generally transverse to the vehicle length, and is disposed below a vehicle front seat.

25           9.     A vehicle having a uni-body construction and configured to efficiently package a fuel cell system, the vehicle comprising:

30                 a fuel cell system including a fuel cell stack, a fuel tank, and a storage device for storing and providing electricity, the fuel tank and the storage device cooperating in a nesting relationship to minimize vehicle space usage; and

a first concavity formed in a floor of the uni-body, the first concavity being configured to receive the fuel cell stack from outside the vehicle.

5                   10. The vehicle of claim 9, wherein the storage device is a battery, and the nesting relationship between the fuel tank and the battery is defined by a concave portion of the battery disposed along a length of the battery, generally conforming to a convex portion of the  
10 fuel tank disposed along a length of the fuel tank.

                  11. The vehicle of claim 9, wherein the uni-body includes a second concavity oriented longitudinally along a length of the vehicle, the second concavity providing a  
15 conduit between a front of the vehicle and a rear of the vehicle.

                  12. The vehicle of claim 11, wherein the first concavity has a first depth and the second concavity has a  
20 second depth larger than the first depth.

                  13. The vehicle of claim 11, wherein the first concavity is oriented generally transverse to the vehicle length, and is disposed below a vehicle front seat.  
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                  14. The vehicle of claim 13, further comprising a pair of longitudinal supports attached to the uni-body, each of the longitudinal supports being disposed across a corresponding portion of the first concavity, thereby adding  
30 strength to the uni-body in a longitudinal direction, each of the longitudinal supports being configured to receive a corresponding mounting bracket of the fuel cell stack.

15. The vehicle of claim 13, further comprising  
at least one transverse support disposed on an inside  
portion of the uni-body along a length of the first  
concavity, thereby adding strength to the uni-body in a  
transverse direction, the at least one transverse support  
being configured to provide an attachment structure for a  
corresponding vehicle front seat.

16. A method for packaging an energy producing  
and storage system in a vehicle, the vehicle including a  
vehicle body having a floor with a first concavity formed  
therein, the method comprising:

placing first and second portions of the  
system together in a nesting relationship, thereby  
minimizing vehicle space usage; and

placing a third portion of the system in the first  
concavity from outside the vehicle such that at least some  
of the third portion does not extend beyond the vehicle  
body.

17. The method of claim 16, wherein the vehicle  
further includes at least one transverse support disposed  
along an inside of the floor along a length of the first  
concavity, the method further comprising attaching at least  
one vehicle front seat to the at least one transverse  
support.

18. The method of claim 16, wherein the system  
includes a fuel cell system, and wherein the first portion  
includes a fuel tank, the second portion includes a storage  
device for storing and providing electricity, and the third  
portion includes a fuel cell stack.

19. The method of claim 18, wherein placing the first and second portions of the system together in a nesting relationship includes placing a concave portion of the battery adjacent a convex portion of the fuel tank, the  
5 concave portion of the battery being disposed along a length of the battery, the convex portion of the fuel tank being disposed along a length of the fuel tank.

20. The method of claim 18, wherein the vehicle  
10 further includes a pair of longitudinal supports attached to the vehicle body across a corresponding portion of the first concavity, and the fuel cell includes at least one mounting bracket, the method further comprising attaching the at  
least one fuel cell mounting bracket to a corresponding  
15 longitudinal support.